Clarion

SERVICE MANUAL

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MODEL ME-8000G

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■SPECIFICATIONS:

Unit:	Stereo Dolby noise reduction unit
System:	2-encoder 2-decoder stereo system
Frequency characteristic:	Encoder (With FM-MPX filter) 20Hz to 17KHz (Dolby REC switch OUT) Decoder (With FM-MPX filter) 10Hz to 17KHz (Dolby PLAY switch OUT)
Distortion:	Less than 0.2%
S/N ratio:	More than 60dB (Dolby REC, PLAY switch OUT)
Tape hissing noise improvement ratio:	More than 8.5dB (at recording, playback with tape deck connected)
Input terminals:	REC IN 80mV 100KΩ (REC LEVEL max.) PLAYBACK IN 80mV 100KΩ
Output terminals:	REC OUT 580mV 5KΩ (REC CAL max.) PLAYBACK OUT 400mV 3KΩ
Semiconductors:	4 ICs, 11 transistors, 12 diodes
Power requirement:	AC 117V 60Hz AC 220V 50Hz AC 240V 50Hz
Power consumption:	7W
Dimensions:	Width 200mm Height 90mm Depth 246mm
Weight:	Approx. 2kg

NOTE: Dolby and the double-D symbol are trademarks of Dolby Laboratories. Under license from Dolby Laboratories.

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■FEATURES:

- **4 built-in Dolby noise reduction circuits**
  Dolby noise reduction circuits for recording (Encode) and playback (Decode) operate independently so that if Model MD-8181G (sold separately is used, Dolby recording and Dolby playback can be performed at the same time.
- **Correct level setting with any kind of tape deck**
  Separate Dolby level calibration control for recording and playback has been employed so that Dolby level can be adjusted separately on recording and playback.
- **Easy-to-use meter**
  Left, right level meters have been employed so that CAL TONE (standard signal) and level setting can be achieved quickly and correctly.
  Moreover, by switching, level check at recording and playback can also be performed.
- **Meter Selector Switch**
  By using the meter selector switch, Dolby calibration can be quickly performed.
- **Recording Input Level Adjustment (With Click)**
  Since the recording input level adjusting knob has a built-in click at the middle point (position 5), level matching with dual cassette deck MD-8181G (sold separately) can be easily performed.
- **Compact, Light Weight**
  Light-weight and compact-style design. No need to select place for installing.
- **Dolby Calibration Tape**
  A high precision Dolby calibration tape, necessary for adjusting Dolby recording and Dolby playback levels, is provided as an accessory.
- **High Precision IC**
  A high precision IC has been employed in the Dolby noise reduction circuit to assure stable performance.

■ADJUSTMENT PROCEDURE:

1. REC DOLBY Circuit, Input Sensitivity Adjustment

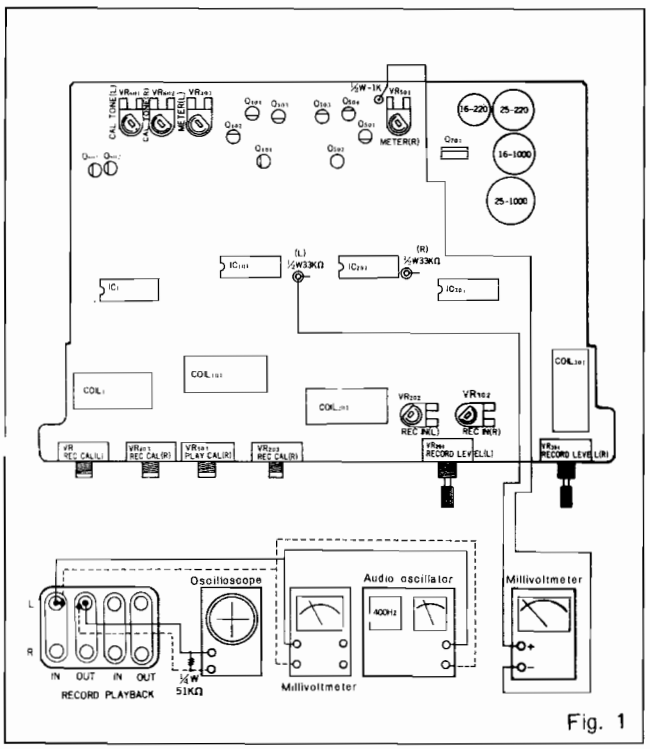


Fig. 1

① For connections refer to the previous section.
② REC LEVEL VR (both L, R) ····· center click position
REC CAL VR (L and R) ····· Max.
PLAY CAL VR (L and R) ····· Max.
REC SW, PLAY SW ····· OUT
METER SW ····· REC
③ Apply 400Hz, 400mV signal to the REC IN terminal (L).
④ Adjust the REC IN VOL (L) VR202 so that indication in the millivoltmeter becomes 580mV at REC T.P (L) 1/2W 33KΩ.
⑤ After completing adjustment of the L-CH, adjust the R-CH also in the same manner.

2. Adjustment of METER

① For connections refer to the previous section. Proceed after the 580mV adjustment described in the previous item.
② Set the meter pointer in the black band by adjusting the METER VOL (L) VR401.

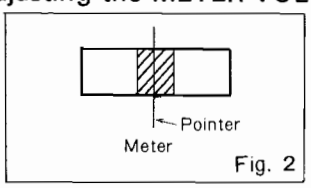


Fig. 2

③ After completing adjustment of the L-CH, perform adjustment of the R-CH also in the same manner.

3. Adjusting Oscillation Level of Calibration O.S.C.

① Make connections the same as in item 1.
② Set the meter SW ··· CAL TONE positions, etc. the same as in item 1.
③ With the millivoltmeter connected to the

REC T.P. (L) [1/2W 33KΩ resistor position], adjust the CAL TONE VR (L) VR601 so that the millivoltmeter indicates 580mV.

④ Check if the meter indication is as shown in Fig. 2 or not. If not, again perform the adjustments of item 2 (meter adjustment) and item 3 and again check meter indication.

⑤ After completing adjustment of the L CH, perform adjustment of the R CH also in the same manner.

■PARTS LIST:

◎Main section

REF.NO.	PART NO.	DESCRIPTION	RANK
1	370-3108-00	Escutcheon	
2	335-0828-00	Bushing	
3	380-3518-01	Knob	2
4	380-3435-00	Knob	2
5	380-3668-00	Knob	2
6	380-3668-01	Knob	2
7	345-2824-00	Rubber plate	
8	345-2861-00	Meter cover	
9	309-0317-01	Front plate	
10	013-3156-03	Switch	2
11	012-3576-00	Variable resistor	2
12	012-3575-00	Variable resistor	2
13	012-3575-01	Variable resistor	2
14	022-0035-00	Meter	3
15	099-4953-01	P.W.B	
16	013-3339-00	Switch	2
17	013-3352-00	Switch	2
18	330-6292-00	Meter bracket	
19	330-6291-00	P.W.B bracket	
20	310-0910-00	Upper case	
21	311-0926-01	Lower case	
22	335-0935-00	Rubber leg	
23	008-0694-10	Power trans	
24	075-0108-01	Jack	
25	335-0725-00	lead bushing	
26	850-1855-01	A-lead	
27	347-0337-00	Paper part	
28	702-3008-81	Tap-screw(M3x8)	

REF.NO.	PART NO.	DESCRIPTION	RANK
29	714-2604-81	Machine screw (M2.6x4)	
30	714-3008-81	Machine screw (M3x8)	
31	714-3008-89	Machine screw (M3x8)	
32	731-3008-81	Taptight(M3x8)	
33	746-0660-00	Special washer	
34	735-4010-11	Double sems screw (M4×10)	
35	740-4000-11	Flat washer	
36	723-4000-21	Hex-nut	
37	722-0282-00	Special nut	
38	745-0485-00	Special washer	
39	335-0779-00	Rivet	
40	353-0110-00	Shade	
41	745-0500-01	Special washer	
42	330-6366-00	Shielded case	
43	330-6365-00	Shielded case	
44	330-5912-01	P.W.B bracket	
45	074-0526-01	Outlet socket	
46	076-0159-00	Plug	
47	099-4997-00	P.W.B	
48	077-0071-00	Fuse receptacle	
49	120-0002-00	Fuse(0.2A)	1
50	330-5911-00	Socket cover	
51	702-3008-89	Tap-screw(M3×8)	
52	714-3010-11	Machine screw (M3x10)	
53	285-0664-01	Guide label	
54	287-1331-01	Name plate	
55	286-4092-00	Set plate	

◎Electrical section

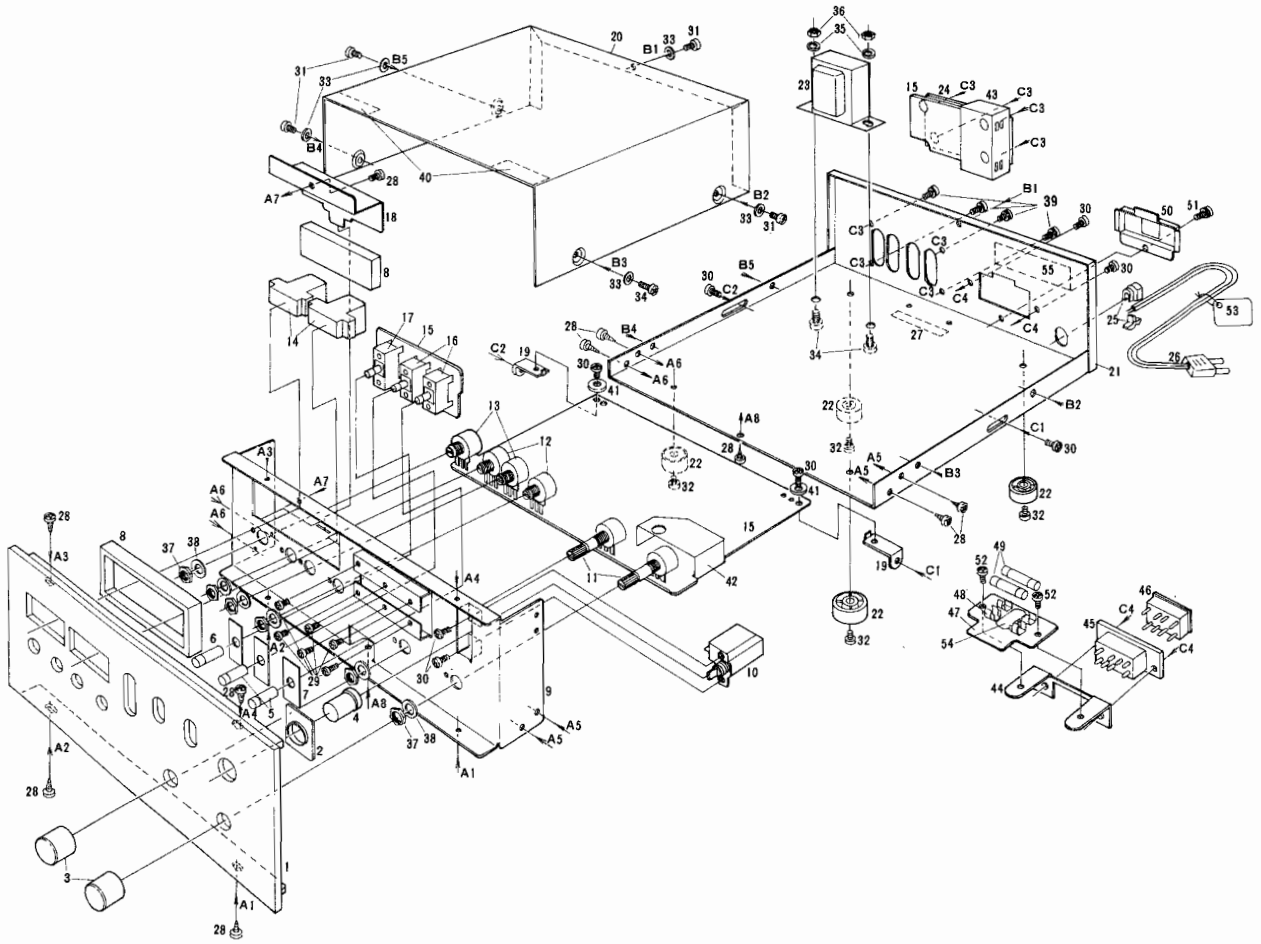
REF.NO.	PART NO.	DESCRIPTION	RANK
$D_{1,101,201,301,401,402,403,404}$	001-0020-00	Diode(1N60)	3
D_{702}	001-0077-00	Diode(10D4)	3
D_{601}	001-0112-00	Diode(1S1588)	3
D_{602}	001-0169-00	Diode(05Z5.6)	3
D_{701}	001-0169-09	Diode(05Z13)	3
TH_{601}	002-0150-00	Thermistor	3
P.T	008-0694-10	Power trans	3
$COIL_{1,101}$	010-1809-00	Coil	3
$COIL_{201,301}$	010-1825-00	Coil	3
$VR_{401,501}$	012-2700-00	Variable resistor (3KΩB)	2
$VR_{601,602}$	012-3286-00	Variable resistor (1KΩB)	2
$VR_{202,302}$	012-3331-00	Variable resistor (100KΩB)	2
$R_{12,112,212,312}$	032-0024-00	Special resistor (¼W3.3KΩ)	
R_{703}	032-0039-00	Special resistor (¼W10Ω)	
$C_{13,113,213,313}$	043-0066-00	Special capacitor (50V4700PF)	
$C_{14,114,214,314}$	043-0067-00	Special capacitor (50V5600PF)	

REF.NO.	PART NO.	DESCRIPTION	RANK
$C_{705,706}$	043-0065-00	Special capacitor (250V4700PF)	
$C_{15,115,215,315}$	043-0068-00	Special capacitor (50V0.027μF)	
$IC_{1,101,201,301}$	051-0094-00	IC	1
$Q_{401,402,403,404,501,502,503,504,601,602}$	102-1815-28	Transistor (2SC1815GR)	1
Q_{701}	103-0235-15	Transistor (2SD235-O)	1
$R_{414,514}$	110-1021-41	Solid resistor (½W1KΩ)	
$R_{412,512}$	110-1811-41	Solid resistor (½W180Ω)	
$R_{3,103}$	110-3021-41	Solid resistor (½W3KΩ)	
$R_{401,501}$	110-3331-41	Solid resistor (½W33KΩ)	
$R_{1,6,105,106,205,206,305,306,610}$	111-1021-32	Film resistor (¼W1KΩ)	
$R_{402,403,404,405,409,502,503,504,505,509,605,607,608,609,611}$	111-1031-32	Film resistor (¼W10KΩ)	
$R_{9,109,209,309,408,508}$	111-1041-32	Film resistor (¼W100KΩ)	
R_{608}	111-1511-32	Film resistor (¼W150Ω)	
$R_{8,108,208,308}$	111-1541-32	Film resistor (¼W150KΩ)	
$R_{10,110,210,310,14,114,214,314}$	111-1811-32	Film resistor (¼W180Ω)	

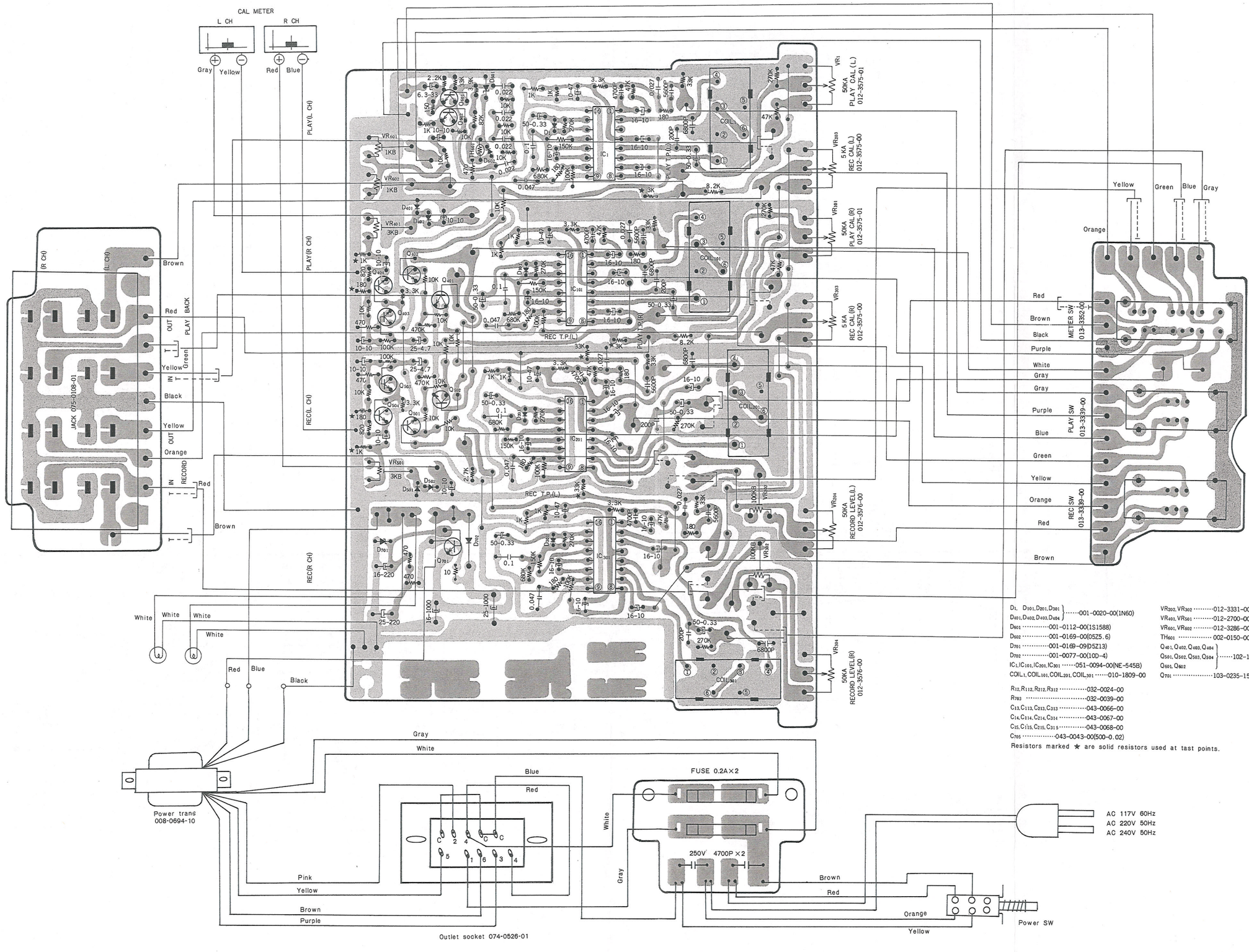
REF.NO.	PART NO.	DESCRIPTION	RANK
R_{607}	111-2221-32	Film resistor (¼W2.2KΩ)	
R_{406}	111-2721-32	Film resistor (¼W2.7KΩ)	
$R_{4,11,104,110,204,211,304,311}$	111-2741-32	Film resistor (¼W270KΩ)	
$R_{411,511}$	111-3321-32	Film resistor (¼W3.3KΩ)	
$R_{15,115,215,315,604}$	111-3331-32	Film resistor (¼W33KΩ)	
R_{603}	111-3921-32	Film resistor (¼W3.9KΩ)	
$R_{410,510,601,701,702}$	111-4711-32	Film resistor (¼W470Ω)	
$R_{13,113,213,313}$	111-4731-32	Film resistor (¼W47KΩ)	
$R_{1,101}$	111-4731-33	Film resistor (¼W47KΩ)	
$R_{407,507}$	111-4741-32	Film resistor (¼W470KΩ)	
$R_{7,107,207,307}$	111-6841-32	Film resistor (¼W680KΩ)	
$R_{413,513}$	111-8211-32	Film resistor (¼W820Ω)	
$R_{2,102}$	111-8221-32	Film resistor (¼W8.2KΩ)	
R_{602}	111-8231-32	Film resistor (¼W82KΩ)	
$C_{9,109,209,309}$	141-1041-16	Polyester capacitor (50V0.1μF)	

REF.NO.	PART NO.	DESCRIPTION	RANK
$C_{601,602,603,604}$	141-2231-13	Polyester capacitor (50V0.022μF)	
$C_{10,110,210,310}$	141-4731-14	Polyester capacitor (50V0.047μF)	
$C_{4,104,204,304}$	141-6821-12	Polyester capacitor (50V6800PF)	
$C_{2,102,202,302}$	153-2012-46	Ceramic capacitor (50V200PF)	
$C_{1,101,201,301,11,111,211,311}$	181-3343-62	Electrolytic capacitor (50V0.33μF)	
$C_{403,404,402,502,503,504,606}$	180-1064-22	Electrolytic capacitor (10V10μF)	
C_{701}	180-1084-22	Electrolytic capacitor (16V1000μF)	
C_{704}	180-1084-42	Electrolytic capacitor (25V1000μF)	
C_{702}	180-2274-32	Electrolytic capacitor (16V220μF)	
C_{703}	180-2274-42	Electrolytic capacitor (25V220μF)	
C_{605}	180-3364-12	Electrolytic capacitor (6.3V33μF)	
$C_{401,501}$	180-4754-42	Electrolytic capacitor (25V4.7μF)	
$C_{7,107,207,307}$	180-4764-22	Electrolytic capacitor (10V47μF)	
$C_{5,105,205,305,6,106,206,306,8,108,208,308,12,112,212,312,203,303}$	181-1063-32	Electrolytic capacitor (16V10μF)	

■EXPLODED VIEW:



■PRINTED BOARD CONNECTION DIAGRAM:



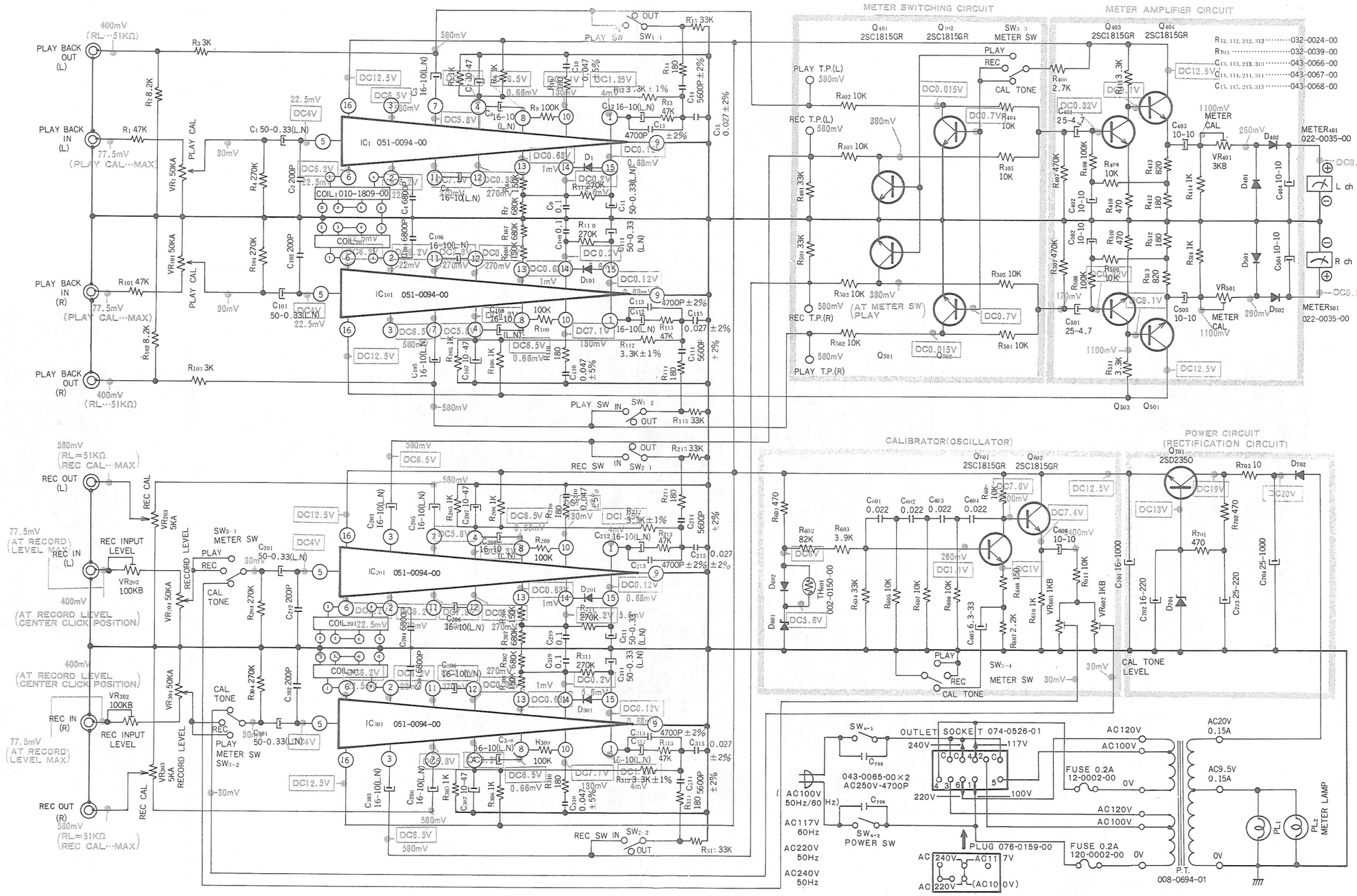
D1, D101, D201, D301 ……001-0020-00(1N60)
D401, D402, D403, D404 ……001-0020-00(1N60)
D501 ……001-0112-00(1S1588)
D602 ……001-0169-00(05Z5.6)
D701 ……001-0169-09(05Z13)
D702 ……001-0077-00(10D-4)
IC1, IC101, IC201, IC301 ……051-0094-00(NE-545B)
COIL1, COIL101, COIL201, COIL301 ……010-1809-00

VR202, VR302 ……012-3331-00(REC INPUT LEVEL)
VR401, VR501 ……012-2700-00(METER CAL)
VR601, VR602 ……012-3286-00(CAL TONE LEVEL)
TH601 ……002-0150-00
Q401, Q402, Q403, Q404 / Q501, Q502, Q503, Q504 ……102-1815-28(2SC1815GR)
Q601, Q602
Q701 ……103-0235-15(2SD2350)

R12, R112, R212, R312 ……032-0024-00
R703 ……032-0039-00
C13, C113, C213, C313 ……043-0066-00
C14, C114, C214, C314 ……043-0067-00
C15, C115, C215, C315 ……043-0068-00
C705 ……043-0043-00(500-0.02)

Resistors marked ★ are solid resistors used at tast points.

■CIRCUIT DIAGRAM:



D1, D101, D201, D301, D401, D402, D103, D404 ……001-0020-00
D601 ……001-0112-00
D602 ……001-0169-00
D701 ……001-0169-09
D702 ……001-0077-00

SW1 ……013-3339-00
SW2 ……013-3339-00
SW3 ……013-3352-00
SW4 ……013-3156-00

VR1, VR101 ……012-3575-01
VR202, VR302 ……012-3331-00
VR203, VR303 ……012-3575-00
VR204, VR304 ……012-3576-00
VR401, VR501 ……012-2700-00
VR601, VR602 ……012-3286-00

NOTES)
1. The DC voltages shown in [ ] are the values at no signal.
2. Values other than those shown in [ ] are the signal levels at 400Hz unless otherwise specified.
3. Use a multimeter (20KΩ/V) for measuring DC voltages.
4. Use a millivoltmeter for measuring signal levels.
5. When measuring signal levels, the PLAY SW and REC SW must be set to the IN position.
6. When measuring the signal level in the vicinity of Q601 and Q602, the METER SW must be set to the CAL TONE position.
7. Each signal level must be measured by setting REC T.P, PLAY T.P to to 580mV.
8. Symmetrical parts shown similar values for both DC voltage and signal level.